Welcome

# MULTIMEDIA COMMUNICATION:
# IT'S IMPLICATIONS ON GENERAL EDUCATION

*By*

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# INTRODUCTION

Many nations are increasing their investments in education and education technology to support the transformation of teaching and learning. Yet, not enough attention is given to design development process and proper understanding of multimedia as one of the most effective tools for advancing knowledge and skill in other to make the investments of these resources economically useful and educationally meaningful.

Hence, this paper review the past research in an attempt to providing for the proper understanding of multimedia technology as one of the most effective tool for advancing knowledge and skills.

# HIGHLIGHTS OF PRESENTAION

- **Overview Of Multimedia**
- **Multimedia Technology In Education**
- **Multimedia Communication**
- **What to Consider in Developing Multimedia Educational Material:**
- **Context For Multimedia Development**
- **Issues on Design And Development Of Multimedia Technology**
- **Literature Review**
- **Educational Benefits Of Multimedia Tools**
- **Factors Affecting Multimedia Based Learning And Teaching**
- **The Trend of Computer Multimedia Technology**
- **Challenges**
- **Conclusion**

# Overview Of Multimedia

*   Multimedia is defined as the combination of various digital media types such as text, images, sound and video, into an integrated multi-sensory interactive application or presentation to convey a message or information to an audience. (Agnew, Kellerman and Meyer, 1996).

*   *Reisman (1994) described multimedia as a ray of "computer-driven interactive communication system, which create, store, transmit retrieve, textual, graphic and auditory net of information.

# Overview Of Multimedia (Cont)

* Multimedia could be interpreted as a combination of data carriers, for example video, CD-ROM, floppy disks, Internet and software in which the possibility for an interactive approach is offered (Smeets, 1996; Jager and Lokman, 1996).

*Fetterman (1997) also viewed multimedia as those resources used for instruction that include one or more media such as graphics, video, animation, image and sound in addition to textual information. He identified four important characteristics of multimedia technology as:

- Multimedia systems are computer controlled
- Multimedia systems are integrated
- The information content must be represented digit
- The interface to the final presentation of media

- *The power of multimedia lies in the fact that it is multi-sensory, stimulating the many senses of the audience.

- *Multimedia from all perspective has been defined in different ways. Mayer (2001) noted that multimedia definitions depends on the factors stressed in each definition. According to Mayer, the first definition of multimedia emphasizes the concurrent use of multiple communication media which include speakers video recorders, and so on.

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# Multimedia Technology In Education

*Multimedia technology in education can be defined in many ways. One broad definition is any learning experience that involves more than one medium for the organization, information exchange, and interactive aspects of the learning experience.

* Multimedia technology in Education has been extremely effective in teaching individuals a wide range of subjects. It has various features of changing the way we communicate with each other, the way we send and receive messages is more effectively done and comprehended.

# Multimedia Communication

*Multimedia communication deals with the transfer, the protocols, services and mechanisms of discrete media data (such as text and graphics) and continuous media data (like audio and video) in/over digital networks. Such a communication requires all involved components to be capable of handling a well-defined quality of service.

* Babajide (2003) identified different types of multimedia communication, some of which include computer hardwares, computer softwares, public address systems, slides, overhead projectors, opaque projectors, videos, cassettes, audiotapes, cassette recorders, flip, time sequence, streamcharts, Diorama still motion pictures among others.

*What kind of approaches and materials would be flexible enough to consider students' previous knowledge, cultural practices, and beliefs while connecting them to academic tasks?

*How can the processes of teaching and learning benefit from each student's special interests and strengths? Project-based learning activities are just one way to achieve these goals.

*Technology also may enable us to support these goals through a combination of pre-authoring (i.e., design) tools, classroom work, portfolio-organization systems, publication systems, and collaboration tools.

*What types of multimedia material support more community-centered environments? People need to see and reflect on real and very often dramatic situations.

The use of multimedia as engines of learning is conditioned by several dynamic contexts such as:

## The Cognitive Context

The emergence of technology as a changing factor in education coincides with the sweeping influence of cognitive science and brain studies as a factor in the transformation of education.

The influence of these forces has greatly increased with the recognition of globalization, the con-comitant demonstrations of the value of innovation, and the prevalence of strong "knowledge-work" sectors.

## The Instructional Context

When developing educational multimedia resources, it is important to take into account objectives at the level of the individual learner, the school, and the state. Each has different characteristics, expectations, and needs, and the means to fulfill them are all interrelated.

### Learner-Centered

What kind of approaches and materials would be flexible enough to consider students' previous knowledge, cultural practices, and beliefs while connecting them to academic tasks?

How can the processes of teaching and learning benefit from each student's special interests and strengths?
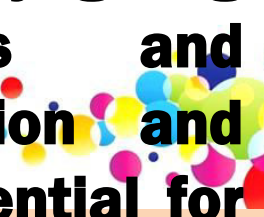
*Knowledge-Centered*

How can we design curricula to promote understanding instead of the acquisition of disconnected sets of facts and skills?

How can we develop in students the ability to think and solve problems by accessing appropriate knowledge?

*Assessment-Centered*

How can we provide opportunities for students to revise and improve the quality of their thinking and understanding?

Technology can help facilitate self-assessment and other meta-cognitive activities in students, in part by giving frequent feedback. Collaborative tools and communications tools may promote reflection and learning as a social activity, enhancing the potential for conceptual change.

- *Community-Centered*

- To what extent are students aware of the differences in learning in school and in their social environment? Do they identify the building blocks of knowledge, and what knowledge they already have is applicable to real-world problems?

- How can students become aware of their role in a globalizing world and understand the importance of formal education in that world?

## Who and Who Are in The Design And Development Of Educational Multimedia ?

- In the design and development cycle it is necessary to define the role of the developers specifically the graphic designer among the developer team (content provider, project manager, instructional designer, programmer and evaluator) that assist in the organisation and management of the development process generally.

- **Graphic Designer And Multimedia Design and Development**

- Graphic designer as a member of experts of design and development of educational multimedia technology in the following major areas:

- (i) developing a visual concept,

- (ii) developing effective visual communication, and

-  (iii) developing conceptual ideas.

-  Graphic designers can draw on techniques used in traditional graphic design field in each of these areas.

- **Developing a Visual Concept**

- The development of visual concepts has always been a part of traditional print-based graphic design (Lawson, 1990). It involves the graphic designer or team coming up with screen designs that organise and clearly present content to maximize users' understanding. In addition the design team attempts to develop a visual concept that is stimulating and appealing to the specific target audience.

- ## Visual communication

- Visual communication refers to the use of universally recognised visual aids and other techniques used to improve the readability and comprehension of text (Hamilton, 1970).

- Designing educational multimedia creates further challenges for graphic designers particularly given the end users of the program will often be unassisted. This places a greater emphasis on the need for the visual communication to be clear and intuitive.

- **Conceptual Design**
- The graphic design field has always placed great emphasis on providing creative solutions to practical and conceptual problems. In the design of educational multimedia, the client or content expert will often present a practical or conceptual problem to the development team.
- In an educational context, this may be a concept students traditionally have trouble understanding or a practical problem associated with simultaneously providing students with access to a wide array of information.

# Literature Review

## Review on overview of Multimedia Technology

*Multimedia technology as an integrated multi-sensory interactive application or presentation to convey a message or information to an audience. (Agnew, Kellerman and Meyer, 1996).

*Multimedia technology as a ray of "computer-driven interactive communication system, which create, store, transmit and retrieve, textual, graphic and auditory networks of information. (Reisman 1994)

- ## Review of Research on Multimedia Technology in Education

-  Teachers' attitude, (Agbonlahor, (undated); Perception and use of media (Mabawonku, 1987); Perceived ease of use (Mabawonku, 1987; Ehikhamenor, 2005) quoted by Agbonlahor (undated); Perceived usefulness (Aghonlahor, (undated); Characteristics of teachers (Gender, Age, Experience; Qualification etc); Adekunmisi, Ojo, Amusa and Obadeyi 2009; Training (Osunade, Philips and Ojo (undated); Opinions of "significant others" and or peers in the education community (Agbonlahor, (undated); Availability of infrastructural facilities (Osunade et al (undated); Iloanusi and Osuagwu (undated); Cost of Purchasing (Ehikhamenor, 2005; Iloanusi and Osuagwu (undated); Management attitudes (Sife, Lwoga and Sanga, 2007); Use/knowledge of computer (Anadarajan, Igbaria and Anakwe, 2002); Power supply (Osunade et al (Undated); Iloanusi and Osuagwu (Undated) amongst others.

# Factors Affecting Multimedia Based Learning And Teaching

- **\*The perceived attractiveness of a message.**

- **The perceived attractiveness applies to images and sounds presented. Attractiveness is a perceived attribute of the information and each individual assesses it subjectively. For instance, presenting a picture of a communicator enhances persuasion only when the communicator is perceived as attractive (Eagly & Chaiken, 1984). (Williams & Tollett, 2000)**

- **\* Quality in terms of physical specifications of the information displayed.**

- **Quality refers to the physical condition of transmitted information and is measured objectively; For instance, the quality of graphic information is usually st terms of its resolution and number of colors used.**

- **Design factor;**

- Design factor refer to the appropriate layout, the attractiveness, and the quality of the material. The layout should minimize information processing load. A good design helps learners to construct knowledge. In terms of attractiveness, the material should be attractive to capture learners' attention.

# Principles Guiding The Development Of Effective Multimedia Presentations.

*The spatial contiguity principle which state that pictures and their related words must be placed nearby.

 *The coherence principle which indicate that extraneous materials should be avoided.

 *The modality principle which indicate that for animation it is better to use audio rather than written text.

 *The redundancy principle which indicate that when using animation and audio, additional text should not be included.

# The Trend of Computer Multimedia Technology

* Multimedia In Education: Universities Approach

* Graphic Design Education in Nigeria

* Computer Multimedia Technology In Graphic Design Education in Nigeria

* The Adoption of Computer Integrated Graphic Design Programme in Nigeria Universities

# Challenges

*Confidentiality in the development of multimedia technologies is a way to make education supposedly, more efficient and relevant to the future [Prain 1999],

- Multimedia technology development and effective application becomes a major challenge in education.

- There is an urgent need to improve the quality of education to bridge the gap between developed and developing nations.

- Multimedia technologies are considered as essential education tool for the enhancement of knowledge and skill.

- Teachers have to be trained in the development, use of multimedia and in its integration in edu activities to enhance appropriate thinkin creativity.

# CONCLUSIONS

**Based on The Foregoing Discussions, this paper**

- Provides an overview of the status of research in the development and application of multimedia within the learning environment.

- Provides that multimedia technology access to knowledge as one of the possibilities of information and communication technology that has tremendous impact on education.

- Also comes up with conservation strategies that generate innovative development and positive attitude towards effective ultilization of various multimedia technologies for the educational changing needs of the world.

# CONCLUSIONS (Cont)

- Noted that effective design and development processes of multimedia technology are required to arrive at a creative, effective, and appropriate implementation that addresses specific parameters of all areas of education.

- In its review of research on the in-depth understanding of multimedia technology studies  shows an overall positive effect of computer multimedia technology use in education.

- Shows that the effect of multimedia technology is highly dependent on careful design and implementation techniques

- Keeps in mind that developers, teachers, and students have roles to play in the creation of multimedia.

# Thank You